The ESCAPE Open Collaboration Agreement (CA)

This Agreement

between

The Organisations listed in Annexe 1

Hereinafter referred to as 'Parties',

defines the ESCAPE Open Collaboration, the subject of this Collaboration Agreement.

Hereinafter referred to as "ESCAPE".

1. DEFINITIONS

Background IPR	means any IPR controlled or owned by any Party prior to the entry into force of this CA or IPR generated by any of the Parties independently of this CA and controlled or owned by that Party;
Confidential Information	has the meaning given to it in Section 7 of this CA;
Creating Party	has the meaning given to it in Section 8 of this CA;
EOSC	means European Open Science Cloud;
Foreground IPR	means any IPR arising from tasks as described in the Work Plan and carried out in the course of this Agreement by any of the Parties;
IPR	means any and all intellectual property rights anywhere in the world whether registered, are registerable or otherwise, including but not limited to patents, trademarks, registered designs, domain names, applications for any of the foregoing, trade or business names, copyright and rights in the nature of copyright, design rights, rights in databases, moral rights and know-how;
Party in Default	has the meaning given to it in Section 14 of this CA;
Work Plan	means the tasks to be performed during the course of this Agreement [further detail in Annexe 2 if required].

2. BACKGROUND

The H2020 ESCAPE science cluster project[2] has brought together the main research infrastructures (RIs) in Astronomy, Astroparticle Physics, Gravitational Waves, Particle and Nuclear Physics to act in a coherent way towards the European Open Science Cloud and associated funding actions.

These RIs are ESFRI projects and landmarks such as CTAO, ELT, EST, FAIR, HL-LHC, KM3NeT and SKAO as well as other pan-European research infrastructures such as CERN, ESO, JIV-ERIC and EGO. In addition, National institutes of the European Union member states that are organized in thematic consortia such as APPEC, ASTRONET, ECFA and NuPECC, support and, together with an ESA representative, supervise the ESCAPE project. The large scientific community relevant to ESCAPE numbers many tens of thousands of scientists.

The partners in ESCAPE recognise the strong synergies and potential commonalities which are there at several levels: the research collaborations themselves are often synergistic and overlapping, with cross-over between all parts of the community, and within their research institutes; there are often common funding agencies for astronomy and particle/nuclear physics in many countries; the data and computing facilities that all of these ESCAPE partners use are often host to both astronomy and particle or nuclear physics experiments. Thus, the natural synergies of the science domains are also reinforced by these factors.

ESCAPE addresses the challenges shared by its partners and the relevant communities for the implementation of open-science practices and the management of FAIR (Findable, Accessible, Interoperable and Reusable) digital research objects into the core operation of ESFRI projects and landmarks and other relevant world class RIs. These challenges are technical, operational, sociological and scientific.

The 2020 update of the European Strategy for Particle Physics received input and strong support from several of the astronomy, astrophysics, and nuclear physics communities. In particular, in terms of computing, data management, and software tools, there was recognition that the broader community faces similar challenges of managing Exabyte-scale datasets, complex software and a complex, distributed and heterogeneous computing infrastructure that is essential for optimising data processing and analysis across the available resources contributed by the RIs and their partner institutes. This apparent complexity (distributed computing) has nevertheless been shown to be an excellent way to optimise the use of available funding in many countries - combining local access to data and facilities with a major contribution to international (often global) research partnerships.

The new generation RIs in ESCAPE will operate more as open facilities, while others are encouraged by European science policy to move quickly towards Open Science, developing and adopting FAIR data and services of relevance, promoting and accelerating the scientific results and knowledge with the community at large. ESCAPE has an effective central role in leveraging use cases and transversal science projects to enhance the participation of researchers in Open Science, in federating innovation

[2] The science cluster projects result from the H2020 topic call INFRAEOSC-04-2018: "*Connecting ESFRI infrastructures through Cluster projects*": ENVRI-FAIR (grant 824068), EOSC-LIFE (grant 824087), ESCAPE (grant 824064), PANOSC (grant 823852), SSHOC (823782). These five science cluster projects address the following large thematic research domains: Biomedical Science, Environment and Earth Sciences, Physics and Analytical, Facilities, Social Science and Humanities and Astronomy.

and training actions for the uptake of FAIR data management practices, and has a unique ambition of enabling a multi-probe and cross-domain Open Science Commons research environment.

Thus, we see a strong motive for a cluster construct such as ESCAPE to play a significant role in building and making use of the inherent synergies between the RIs and their communities. This in turn will optimise the significant long-term investments of the funding agencies by sharing facilities, tools, and experience across the ESCAPE community.

It is clear that there are other coordinating bodies with which many of the RIs interact; ESFRI itself has an overall coordination role, the EOSC Association for planning the Open Data Science implementation in Europe, the coordination forums and councils such as ERIC Forum and EIROforum, while the thematic and national agencies coordinate through international consortia such as APPEC, AstroNET, ECFA, NuPECC, etc. However, we see a distinct role for ESCAPE - to build on synergies across the broad domain in large scale data management, computing, software, tools, and services, and the expertise of the communities, strengthen common EOSC approaches between the RI communities as well as to coordinate new open-science transversal projects among researchers. This is a unique combination that should be taken advantage of.

Another important role of ESCAPE is to act as a single voice representing our community, towards informing and advising the EOSC Association, towards funding and engagement opportunities such as with the European Commission, providing advice for the update of the European Union research infrastructure work programme and engaging with the operationalization of the European Research Area.

ESCAPE supports its research communities across Europe in contributing to EOSC. ESCAPE is seen as a strong voice in ensuring that EOSC can respond to the needs of our large communities, remembering that Europe is often only one part of our research partnerships and that we need to ensure ongoing global collaboration and interaction.

ESCAPE is a good vehicle for long-term sustainability of this collaboration. ESCAPE relies on the thematic consortia of national agencies for a user-oriented work programme and to encourage new RIs to join the collaboration. Not all potentially collaborating RIs will be on the ESFRI roadmap (some currently therein, will leave the roadmap, and new ones will join). ESCAPE will work closely with ESFRI but will also embrace a larger set of thematic projects and will not neglect the long-tail of science and technology relevant to our research fields. In addition, broader partnerships with other science cluster projects would be beneficial. Indeed, such a vehicle will also put ESCAPE on an equal footing with other thematic science clusters, strengthening collaborations among clusters and building new ones outside of the EOSC projects. ESCAPE can act as a community towards the EOSC landscape at large.

Thus, we propose a lightweight collaboration as a sustainable organisation to represent these fields. The collaboration will be open to new related RI's joining, and will work to recognise synergies and act as a coherent community.

3. SCOPE

This Agreement outlines and defines the intentions of the Parties with respect to the individual and joint responsibilities which the Parties intend to have to each other in relation to the contemplated ESCAPE Collaboration and the funds provided to support the CA related activities.

4. COMMENCEMENT AND DURATION

This Agreement shall come into force on January 1st 2023 and will continue to be in effect until 31 December 2026. It will be automatically renewed yearly thereafter, subject to review by the Parties.

Each Party has the right to discontinue the arrangements at any time subject to a period of three months' notice being given. The CA may also be terminated at any time by mutual consent of all Parties. In any cases of discontinuance, the Parties will honour agreed commitments either via accepted arrangements or suitable alternatives negotiated at that point.

5. PARTIES

The Parties to this CA are listed on Annexe 1. They are Research Performing Organisations (RPO) and Research Infrastructures (RI), represented either by the management board/coordinating institute of their own scientific collaboration or, when applicable, by the legal entities, such as Intergovernmental Organisations and ERICs, operating them, in the fields of Astronomy, Astrophysics, Astroparticle Physics, Gravitational Waves, High Energy Particle Physics, and Nuclear Physics.

Additional parties may be added in the future, with the consensus of the Parties.

6. ROLES AND RESPONSIBILITIES OF THE PARTIES

The Parties will use all reasonable endeavours to achieve the objectives set out in the Work Plan.

The work will be managed using the structure and approach outlined in the Work Plan.

The Parties intend to contribute the time and effort necessary to successfully undertake and complete the work as specified in this CA.

7. CONFIDENTIALITY

The Parties may disclose to each other information that the disclosing Party deems confidential and which is (i) in writing and marked "confidential", or (ii) disclosed orally, and identified as confidential when disclosed, and reduced in writing and marked "confidential" within fifteen (15) days of the oral disclosure (hereafter referred to as "**Confidential Information**"). Confidential Information shall be held in confidence and shall not be disclosed by the receiving Party to any third party without the prior written consent of the disclosing Party.

Notwithstanding the foregoing a Party is entitled to disclose Confidential Information which it is required by law to disclose or which, in a lawful manner, it has obtained from a third party without any obligation of confidentiality, or which it has developed independently from any Confidential

Information received under this CA, or which has become public knowledge other than as a result of a breach on its part of these confidentiality provisions.

This confidentiality obligation is binding during the course of this CA as well as for a period of five (5) years after expiry or termination of this CA.

8. INTELLECTUAL PROPERTY RIGHTS

This CA shall not affect the proprietary rights of the Parties. Each Party can make available to the other Parties part of its Background IPR as that Party deems appropriate, provided that each Party acknowledges and agrees that :

- it shall only be entitled to use that Background IPR for the purposes set out in the CA and the duration of the CA and for no other purposes whatsoever;
- it shall not use that Background IPR for any purpose whatsoever without entering into a separate written licensing agreement with the Party that owns that Background IPR;
- no Party shall make any representation or warranty as to the accuracy or completeness, merchantability or fitness for a particular purpose of any Background IPR made available by it under this CA, and any warranty in relation to these matters that might otherwise be implied by law is excluded insofar as it is possible to do so.

Each Party (the "**Creating Party**") shall own the Foreground IPR that it independently generates under this CA and be entitled to obtain patent or other protection of such Foreground IPR. Applications and patents shall be at the expense of the Creating Party.

Foreground IPR developed jointly by two or more Creating Parties shall be jointly owned and the Creating Parties are entitled to obtain patent or other protection of such Foreground IPR. If one or more of the Creating Parties does not wish to obtain patent or other protection of the IPR they agree to grant permission to any such applications by the remaining Creating Parties, who in turn will grant them non-exclusive, royalty free, non-transferable, perpetual licenses to use said IPR. Applications and patents shall be at the joint expense of the applicants. Any Creating Party not wishing to obtain a patent or other protection of the IPR will not be required to financially participate to the related expenses.

9. PURPOSE AND OPPORTUNITIES

Considering that:

1) The Parties are partner institutions that collaborate in the ESFRI and other world-class Research Infrastructures (RI) that are constructing or operating scientific instruments which are capable of collecting large scale datasets in the domains of Astronomy, Astrophysics, Astroparticle Physics, Cosmology, Gravitational Waves, Particle and Nuclear Physics, with a range of common scientific and technical interests;

2) The acquisition, storage, management, distribution, and analysis of scientific data at such a scale represent technological and management challenges that are unique and unprecedented in science;

3) These data will be analysed by internationally distributed scientific collaborations and made available in a FAIR (Findable, Accessible, Interoperable and Reusable) and Open manner;

4) The computational and storage resources and operating facilities needed by the Parties and their respective scientific collaborations will, in many countries, be common;

5) The Parties represent a common and aligned set of interests towards the European landscape and in particular to the European Open Science Cloud; while recognising that there is a global dimension to many of the RIs;

6) The challenges faced by the Parties represent several areas that can potentially be addressed collaboratively;

this CA recognises the intention of the Parties to establish a close collaboration in order to address a number of relevant topics that are synergistic between the associated Research Infrastructures, including Exabyte-scale data management, tools for Open Science and FAIR Data research, and career development and recognition of data-science, software and computing as a key career choice within the scientific collaborations. Collaboration with the EOSC, and other Science Clusters are strategic activities, as is the development of sustainable models for maintaining the tools and services of ESCAPE, for the benefit of the collaboration.

This Agreement aims at establishing a framework for collaborative activities and projects that address joint challenges in the area of Open Science in the scientific domains listed above. In this framework, the Parties shall:

1) Organise annual meetings held at one of the partner Institutes to monitor the progress of the collaboration, to agree strategic directions and to establish collaborative activities including, but not limited to, organising workshops and education/training actions on specific areas of mutual interest.

2) Establish and maintain a plan of work for the ESCAPE collaboration – see Annexe 2. Working groups may be set up to develop topics of common interest (see below). The output would be white papers that will be used to inform ESCAPE roadmaps, to influence funding agencies for potential future funding opportunities, as well as vendor technology development, and to help the management of RIs and RPOS to mutually coordinate regional and European initiatives, leveraging them for the ultimate benefit of ESCAPE research communities.

3) Collaborate as ESCAPE with other science clusters in the context of European Open Science, participating in ensuring (thematic) directionality towards EOSC and its Strategic Research and Innovation Agenda (SRIA), structuring the work programmes of the Horizon Europe and subsequent framework programmes.

4) Coordinate among the Parties the ESCAPE participation in funding calls and projects.

5) Coordinate priorities, roadmaps, and policies with the concerned international thematic consortia: APPEC, ASTRONET, ECFA, NuPECC and others.

6) Support the introduction of new ESFRI or other world-class RIs within the ESCAPE domains, into the collaboration.

7) Seek specific funding opportunities to help develop policies, tools and services common across the RIs, needed in a context of Collaborative and Open Science.

8) Support for scientific projects between the ESCAPE RIs, including sustaining the necessary infrastructure and services, for example for a platform for Multi-Messenger Astronomy.

Finally, it should be noted that the Horizon Europe programme will likely provide a number of substantial funding opportunities in the areas of HPC, AI etc, and therefore the Parties to this CA will explore the possibilities of jointly bidding for such funds.

10. ADMINISTRATIVE MATTERS

This Collaboration Agreement (CA) signifies a statement of intent to collaborate between the Parties. This CA does not restrict the rights of any Party to enter into collaborative agreements, contracts or working relationships with other Parties.

Separate agreements will be required for any and all collaborative projects that the Parties wish to enter into. The Parties understand that any financial considerations associated with any form of collaborative project will be dealt with separately via a legal contract. In the same context the Parties agree to cooperate on resolution of contractual and IPR issues.

Unless and until the Parties have agreed to such separate agreement(s), if any, no Party will be under any legal, financial or other obligation of any kind, with the exception of the obligations explicitly set out in Sections 7 (Confidentiality), 8 (Intellectual Property Rights), 11 (Liability), 12 (Force Majeure), 13 (Public Relations and Publications) and 20 (Applicable law and settlement of disputes) of this CA which are legally binding for the Parties.

11. LIABILITY

With respect to information, data and services supplied by a Party to another Party under this CA, no warranty or representation of any kind is made, given or implied as to the sufficiency, accuracy or fitness for a particular purpose of such information, data and services, nor as to the absence of any infringement of any proprietary rights of third parties.

The recipient Party shall be entirely responsible for the use to which it puts such information, data and services, and shall hold the other Parties free and harmless from liability and indemnify them for any loss or damage with regard thereto.

No Party shall be responsible to the other Party for punitive damages, indirect or consequential loss or similar damage such as, but not limited to, loss of profit, loss of revenue or loss of contracts.

Any limitations of liability for direct damages or loss shall not apply (i) in the case of damage caused by a proven wilful act or gross negligence, and (ii) for any activity involving the wilful or grossly negligent misuse of anything protected by the intellectual property rights of another Party. Each Party shall be solely liable for any loss, damage or injury to third parties in relation to its execution of this CA.

In no event shall this CA be deemed to give rise to any joint or joint and several liabilities between the Parties. Each Party shall be solely liable for any loss, damage or injury to third parties resulting from the performance of the said Party's obligations under this CA.

12. FORCE MAJEURE

No Party shall be liable for any delay or for the non-performance of any of its obligations under this CA or for any consequence thereof if such delay or non-performance is due to any cause whatsoever beyond its reasonable control provided such Party:

- shall promptly give notice in writing to the other Parties of the cause of such delay or non-performance; and
- shall use all reasonable endeavours to avoid, eliminate and overcome such cause and shall resume performance of its obligations as soon as reasonably possible.

Promptly upon receipt of the abovementioned notice the Parties shall endeavour to agree upon the measures to be taken and shall take all reasonable steps to mitigate the effect of such cause upon the performance of this CA.

13. PUBLIC RELATIONS AND PUBLICATIONS

Any publication by a Party resulting from the activities carried out under this CA shall be subject to prior consensus of the other Parties, which is not to be unreasonably withheld.

The Parties to the Collaboration may each release information to the public, provided it is related only to its own part of the activities under this CA. In cases where the activities of other Parties are concerned prior consultation shall be sought.

Each Party will use reasonable efforts to provide a response within seven (7) working days.

In all relevant public relations activities, the contribution of each Party related to activities covered by this CA shall be duly acknowledged, as well as any EC-funding source that made the specific activities possible.

14. DEFAULT

If any Party (hereinafter called the "**Party in Default**") (i) is in material breach of its obligation under this CA which breach is irremediable, or if capable of remedy has not been remedied within one month of receipt of written notice from any other Party or Parties requiring that it be remedied or (ii) shall be or become bankrupt or insolvent, or make any composition with its creditors, or have an

administrator or administrative receiver appointed in respect of its undertaking or any of its assets, or have an administration order made against it or (otherwise than as a solvent entity for the purpose of and followed by amalgamation or reconstruction) commence to be wound up, then, and without prejudice to any other rights or remedies of the Parties, by consensus the other Parties shall have the right to terminate with immediate effect the participation of the Party in Default in this CA by serving written notice on the Party in Default.

Termination of the participation of the Party in Default in this CA shall only terminate the Agreement as regards the Party in Default's relationship with the other Parties and the Agreement will continue in force as between the remaining Parties.

15. NO PARTNERSHIP

The relationship between the Parties in relation to the subject matter of this CA is as described in this CA, and no employment, partnership, joint venture or agency relationship shall be deemed to exist between the Parties. No Party shall have the power to bind or pledge the credit of any other Party.

16. SUCCESSORS AND ASSIGNMENTS

This CA and the rights and obligations hereunder shall be binding upon the Parties hereto and their respective successors and assigns and shall inure to the benefit of the Parties hereto and their respective successors and permitted assigns.

The rights and obligations of each Party under this CA may not be assigned to any other person without prior written consent from the other Parties, and any assignment not in compliance with this Section shall be null and void *ab initio*.

17. NOTICES

Unless otherwise stated herein, any notice to be given under this CA shall be made in writing to all other Parties and shall be deemed validly given if delivered personally, sent by courier or other express mail service, sent by registered or certified mail, postage prepaid, return receipt requested or sent by confirmed facsimile. The Parties acknowledge that any notification as referred to under this CA, any warning, order or any other communication in relation to this CA as sent under electronic form pursuant to the terms of this CA shall be accepted, in any legal proceedings related to this CA, with the same legal value as any other document as created and stored in hard copy form.

18. AMENDMENTS

Except as otherwise expressly permitted in this CA, this CA may not be modified or amended except by an instrument or instruments in writing signed by all Parties.

19. COUNTERPARTS

This CA may be executed and then delivered via facsimile transmission, via the sending of PDF or other copies thereof via email and in one or more counterparts, each of which shall be an original but all of which taken together shall constitute one and the same agreement.

20. APPLICABLE LAW AND SETTLEMENT OF DISPUTES

This CA shall be construed in accordance with and governed by the laws of Belgium.

All disputes arising out of or in connection with this CA which cannot be solved amicably, shall be finally settled under the Rules of Arbitration of the International Chamber of Commerce by one or more arbitrators appointed in accordance with the said Rules.

The place of arbitration shall be Brussels in English language if not otherwise agreed by the conflicting Parties. The award of the arbitration will be final and binding upon the Parties.

Nothing in this CA shall be deemed or interpreted as a waiver, express or implied, of any privileges or immunities accorded to any of the Parties by their constituent documents or under international public law.

ANNEXE 1 - PARTIES

The Parties forming the ESCAPE Open Collaboration:

1. CERN: for HL-LHC and its other infrastructures
2. CTAO
3. KM3NeT
4. EGO
5. ESO: for ELT and its other infrastructures
6. EST
7. FAIR
8. JIV-ERIC
9. SKAO

Date:

ANNEXE 2 – AREAS OF COLLABORATION / WORK PLAN

The initial set of topics of common interest includes, but is not limited to:

1) Collaboration on common infrastructure and tools, recognising that our National and Institutional data and computing centres support many RIs, and that common services and infrastructure are essential to sustainable and cost-effective operation and support of the scientific communities.

2) Continued development of a federated data management infrastructure for FAIR and Open Science, which develops the key features of scalability to multi-Exabytes, reliability, policy-driven replication, and content delivery to distributed processing resources. The data infrastructure should be usable by all the participating RIs and integrated with the European Open Science Cloud core services. Specific services will be proposed for inclusion in the EOSC Exchange layer.

3) Develop the repository and catalogue of scientific software, tools and services developed in the ESCAPE project, support a long-term curation for the content of the repositories including new additions, and continue to integrate into the EOSC Interoperability Framework as appropriate.

4) Support and develop the common baseline of the Virtual Research Environments developed in ESCAPE. This should include support for long term research infrastructures such as IVOA and WLCG where appropriate and their inclusion in EOSC.

5) Develop a sustainable model of collaborative operations and support for these environments, services and tools. This is critical and must be in place to ensure the support of tools and services developed in ESCAPE and brought into production as key elements of the RI computing environments (for example Data Lake, OSSR, etc). Investigate how some of the operations could be supported by EOSC.

6) Collaboration on Citizen Science through continued development and evolution of citizen science infrastructures, tools, and credit systems. This should be integrated with the ESCAPE baseline services as far as reasonable in order to make open research data accessible. Development of open science portal(s) to publish and make available open data sets and tools to exploit them, and mechanisms to make resources available to support such projects. Ideally this would be in collaboration with other Science Clusters and part of a larger commitment to “Science and Society”.

7) Collaboration on advanced technologies, such as AI/ML, and Quantum computing, useful in support of the data analysis in the ESCAPE scientific domains. These should be driven through strong science use cases, and bring in novel algorithm development and support.

8) Collaborate with the HPC community, through the FENIX, PRACE, and EuroHPC partnerships, to ensure that ESCAPE RI’s can integrate the use of HPC services as relevant components of an overall computing environment.

9) Develop, in collaboration with other Science Clusters, a European Virtual Software Institute for Research software. The concept is to tap into the research knowledge of University CS departments, software engineering schools for the benefit of (natural) science developments. The aim is to:
    a. Enable R&D resulting from collaborations of CS and natural science;
    b. Establish a career path for scientists and engineers working in software and computing in natural science [in many fields the recognition of software work and finding / retaining experts is a major concern];
    c. Cross-fertilize knowledge between different science domains and make the acquired knowledge available across domain boundaries;
    d. Act as a lobbying organisation and raise awareness of software and computing in natural science.

    The action should build on work in national RSE projects, software carpentries, etc. including collaboration with SMEs to benefit from expertise, projects, placements, etc.

    Organise also a scientific computing conference series, for the broad scientific research community, in collaboration with other Science Clusters.

10) Career development for young scientists and training in Astronomy, Astroparticle, astrophysics, cosmology, high energy, and nuclear physics, specialising in scientific computing and research software (this action should be in collaboration with other clusters). This will build upon the activities of a Virtual Software Institute (as in 9).

11) Pursue the aims of transversal/multi-domain (Test) Science Projects as in the H2020 EOSC Future project, targeting a second phase within Horizon Europe work programme to uptake new emerging and challenging "Open Science Objectives". Extend commitments from more RIs in current and new Open Science Projects (OSP). ESCAPE will also leverage the inter-cluster coordination for Cross-Cluster Open Science Projects (COSP) and when relevant will act to reach out and support "the long tail" of science and multiple scientific communities.

12) Support the European Strategy for Data by exploring and building synergies on "Sector Data Spaces" in which interests of ESCAPE Parties would emerge and for the provision of secure and FAIR-enabling European cloud services.
    For example:
    a. Cross-sector sharing of data and Green Deal data for a unifying, forward-looking approach of any Big Science facility for energy efficiency, water management, support of circular economy and any environmental implications of RIs construction, etc.
    b. Health data linked with high energy particle and nuclear physics facilities for preventing/treating diseases;
    c. Industrial and Manufacturing data by exploiting FAIR digital objects from the R&D programmes for detectors, sensors, telescopes and other devices of the ESCAPE RIs;
    d. Opening data and innovation projects to training actions by research for a Skills data space, to reduce the skills mismatches between the education and training systems and the labour market needs.

It is understood that further technical and policy topics may be added to the above list.

ANNEXE 3 – ORGANISATION AND COMMON DUTIES

The Parties commit to set up and support the most appropriate, lightweight and efficient management organisation of the ESCAPE Collaboration. We note that the individual national institutions will be represented through the RIs.

The Parties will set up and appoint members of the following structures:

1. A Director of the Collaboration, elected by the RIs in the Collaboration (1 vote each), with a term of 2 years, that can be re-elected.

2. A Strategy Board (SB)
    a. Members of the Strategy Board are the nominated representatives and alternates (1 representative + 1 alternate) of each of the RI's that are ESCAPE partners.
    b. The SB will be chaired by the Director of the Collaboration.
    c. The function of the SB is to define strategy, agree resources as needed for collaborative projects, coordinate with other Science Clusters, coordinate with the EC, coordinate and collaborate with ESFRI, ERA, and JENAA (and its constituent consortia) and organise response to potential funding calls.
    d. The SB will oversee and ratify the work programme.
    e. The SB will meet 3-4 times per year, or as needed.
    f. The SB can instantiate working groups to address specific issues of policy, strategy, etc.

3. An Executive Board (EB)
    a. The EB reports to the SB.
    b. The members of the EB are the technical coordinators (or equivalent) of the RIs in the collaboration and leaders of implementation working groups. The chairperson will be nominated by the members. The chairperson will become the Technical Coordinator of the collaboration, and will have a term of 2 years, renewable.
    c. The role of the EB is to:
        i. Propose to the SB and coordinate agreed technical collaborative projects between the RIs;
            - This can include but is not limited to work on common software, infrastructure, services, etc.
            - The work will be executed through setting up and overseeing working groups with members drawn from the RI's as needed, and leaders of any eventual work package structure who would also be members of the EB.
        ii. Technical coordination with the EOSC and EOSC-related projects.
    d. The EB will meet monthly or as required.

4. An External Advisory Board (EAB)
    a. Members of the EAB are nominated by the Director and are asked to provide independent advice, to conduct an independent assessment of the progress being made by the ESCAPE collaboration as well as to support connection with the national thematic institutes and the scientific community at large[3].

[3] The current H2020 ESCAPE EAB is composed of an ESA representative as well as the chairs of APPEC, ASTRONET, ECFA and NuPECC.

SIGNATURE PAGE

IN WITNESS WHEREOF, the Parties hereto have duly executed this Agreement as of the dates written below.

European Organisation for Nuclear Research (CERN)
RI represented: High-Luminosity LHC (HL-LHC) and other infrastructures

Done in _____ [Place]

on _____ [Date]

Signature _____

Name of signatory:

Position:

SIGNATURE PAGE

IN WITNESS WHEREOF, the Parties hereto have duly executed this Agreement as of the dates written below.

Cherenkov Array Telescope Observatory (CTAO)

Done in _____ [Place]

on _____ [Date]

Signature _____

Name of signatory:

Position:

SIGNATURE PAGE

IN WITNESS WHEREOF, the Parties hereto have duly executed this Agreement as of the dates written below.

KM3NeT Research Infrastructure

Done in _____ [Place]

on _____ [Date]

Signature _____

Name of signatory:

Position:

SIGNATURE PAGE

IN WITNESS WHEREOF, the Parties hereto have duly executed this Agreement as of the dates written below.

European Gravitational Observatory
RI represented: EGO-Virgo

Done in _____ [Place]

on _____ [Date]

Signature _____

Name of signatory:

Position:

SIGNATURE PAGE

IN WITNESS WHEREOF, the Parties hereto have duly executed this Agreement as of the dates written below.

European Southern Observatory (ESO)
RI represented: Extremely Large Telescope (ELT) and other infrastructures

Done in _____ [Place]

on _____ [Date]

Signature _____

Name of signatory:

Position:

SIGNATURE PAGE

IN WITNESS WHEREOF, the Parties hereto have duly executed this Agreement as of the dates written below.

European Solar Telescope (EST)

Done in _____ [Place]

on _____ [Date]

Signature _____

Name of signatory:

Position:

SIGNATURE PAGE

IN WITNESS WHEREOF, the Parties hereto have duly executed this Agreement as of the dates written below.

Facility for Antiproton and Ion Research (FAIR)

Done in _____ [Place]

on _____ [Date]

Signature _____

Name of signatory:

Position:

SIGNATURE PAGE

IN WITNESS WHEREOF, the Parties hereto have duly executed this Agreement as of the dates written below.

Joint Institute for VLBI-ERIC (JIV-ERIC)

Done in _____ [Place]

on _____ [Date]

Signature _____

Name of signatory:

Position:

SIGNATURE PAGE

IN WITNESS WHEREOF, the Parties hereto have duly executed this Agreement as of the dates written below.

Square Kilometre Array Organisation (SKAO)

Done in _____ [Place]

on _____ [Date]

Signature _____

Name of signatory:

Position: